

Listing of Claims

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. A process for fabricating a whole solid-state pH sensing device by using polypyrrole as the contrast pH detector, said process comprising the following steps:

step 1: preparing various solid-state substrates and selecting an appropriate substrate based on ~~the~~a solid-state sensing material and ~~the~~a sensing environment;

step 2: depositing ~~a~~the solid-state sensing material on said substrate;

step 3: ~~routing~~positioning the device;

step 4: using ~~a~~an epoxy resin to seal the material and fixing ~~the~~ sensing window area; and

step 5: then immersing the device into a electro polymerizing solution, and electro-polymerizing by using polypyrrole, thus completing the fabrication of the whole solid-state pH sensing device-, wherein

the step of electro-polymerizing polypyrrole further comprises the following steps:

step A: preparing a finished conductive substrate;

step B: cleaning the substrate;

step C: preparing said electro-polymerizing solution, which comprises a buffer solution, electrolytes, the monomer of polypyrrole;

step D: connecting the substrate to a positive electrode of a power supply, and connecting a platinum electrode to a negative electrode of the power supply, and

immersing the substrate into said electro-polymerizing solution, where the power supply provides a constant potential which is higher than the oxidizing potential of said polypyrrole, in a manner that said polypyrrole polymerized on said substrate;

step E: immersing a polypyrrole sensor into de-ionized water to clean said polypyrrole sensor;

step F: removing and drying said sensing device, thus completing fabrication of the polypyrrole sensor.

2. (Cancelled)

3. A process for fabricating a whole solid-state pH sensing device by using the polypyrrole as the contrast pH detector as recited in Claim 1, wherein said solid-state substrate is selected from the group consisting of a silicon substrate, a glass substrate, a ceramic substrate ~~or~~ and a plastic substrate.

4. A process for fabricating a whole solid-state pH sensing device by using the polypyrrole as the contrast pH detector as recited in Claim 1, wherein said sensing material is selected from the group consisting of a tin dioxide membrane ~~or~~ and other solid-state conductive ion-sensing membrane.

5. A process for fabricating a whole solid-state pH sensing device by using the polypyrrole as the contrast pH detector as recited in Claim 1, wherein said polymerizing solution of the polypyrrole comprises a buffer solution, salts, polypyrrole, ~~such as the electro-polymerizing solution comprising a phosphate solution, potassium chloride, and polypyrrole;~~ wherein, through changing the composition of said

polymerizing solution, the control of the sensitivity of said polypyrrole sensor ~~can be~~
achieved, and wherein ~~this technology~~ the process ~~can be~~ applied to fabricate the
~~corresponding~~ a sensing electrode with an appropriate sensitivity and the control of the
sensitivity of ~~the~~ a differential pair pH sensing device ~~can be~~ obtained.

6. (Cancelled)
7. (Cancelled)
8. (Cancelled)